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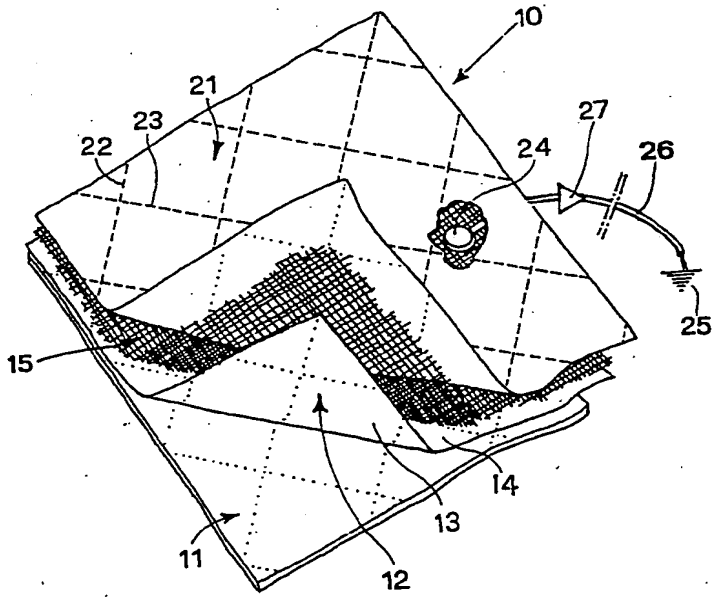
(54) Title: CLOTH FOR PROTECTION AGAINST TERRESTRIAL ELECTROMAGNETIC FIELDS



(57) Abstract

Cloth (10) for protection against electromagnetic fields comprising a network (15) of copper made of electrolytic copper wires for the weft and strips of copper-cadmium wound spirally round a polyester or other kind of insulating core, for the warp, and a silvered layer (12) comprised between a sheet (21) of cotton fabric and one of felt (11) firmly associated by means of crosswise quilting (22, 23), the purpose of the cloth being to absorb electrostatic energy, discharge it into the environment through the copper network (15) provided with means (26) for the purpose, and repel, by reflection towards the ground, the electromagnetic waves issuing therefrom by means of the silvered layer (13, 14).

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CLOTH FOR PROTECTION AGAINST TERRESTRIAL ELECTROMAGNETIC FIELDS

The present utility model concerns cloths that give protection to persons against terrestrial electromagnetic fields.

The adverse effects caused to the human body by an accumulation of electrostatic charges and by electromagnetic waves are known to many.

Present protective measures and devices of various kinds give positive results only for one or other of these phenomena and only to a limited extent.

Greater effectiveness for respectively grounding the electric charges and for providing a screen against radiations generally is accompanied by excessive weight and by rigidity of the object used for these purposes.

The above invention offers an overall solution to the problem, as will be explained hereafter.

Subject of the invention is a cloth for protection from electromagnetic fields comprising a network of copper and a silvered sheet.

The copper network is there to absorb electrostatic energy from where it can be discharged into the environment while the purpose of the silvered layer is to reflect back to the ground the electromagnetic waves issuing from it.

The copper network is comprised within an insulating fabric formed of polyester threads or some other insulating material.

Upon one of the two faces of the copper network there is a layer of cotton or other insulating material while

on the other face, that of the silvered sheet,there is a non-woven polypropylene felt fabric or other insulating material.
The copper network comprises electrolytic copper wires for the weft and, for the warp, copper-cadmium bands wound in a spiral round an insulating polyester core, or other material.
The various components, namely layer of cotton material, insulating fabric with copper network, silvered sheet and felt, are firmly held together by quilting or crossed stitching.

In a preferred execution the copper wire diameter is between mm 0.10 and 0.15, the PVC sheet silver coating is about 45 microns and felt thickness between 2 and 3 mm.
The copper network is earthed by a floor socket and wire to it.
Said wire is provided with a diode to permit outflow of electromagnetic charges and prevent their entry.
Alternatively the copper network is connected to an antenna preferably of one or more wires,cords and the like left free in the environment, or other means.
Said antenna is also fitted with diodes.
The advantages of the invention are clear.
By association between copper network and silvered sheet, pathogenous radiations from the ground whether electrostatic charges or electromagnetic radiations, are repelled or absorbed and redischarged into it thus partly or entirely preventing any possible harm to persons.
The double and simultaneous effect of reflection and absorption with discharge into the ground provides a comprehensive solution to the problem of terrestrial radiations of a harmful nature that is both simple and inexpensive.
The adoption of fine copper conducting wires and of spiralling bands of copper-cadmium and of silvered sheets of PVC, gives the maximum effect but also with maximum flexi-

bility and softness so that the characteristics of the woven or non-woven fabrics to which the first above mentioned are associated, are maintained practically unchanged. The resulting cloth is therefore extremely comfortable for the user while also giving maximum protection.

Characteristics and purposes of the invention will become even clearer after the following explanation of an example here given illustrated by diagrammatic figures.

Fig. 1 Perspective view of a piece of the invented cloth partially folded back.

Fig. 2 Detail of the copper netting inside the cloth.

The cloth 10 comprises four main components laid one over another and all matching, namely a piece of polypropylene felt 11 of a few millimitres thick, a sheet 12 of PVC coated on each side, 13 and 14, with a silvered layer, a netting 15 formed of polyester threads, 16 and 17, for weft and warp with in between bare copper wires 18 for the weft and polyester wires 19 spirally wound with a bare cadmium strip 20 for the warp, and a piece of cotton fabric 21. All these components are firmly associated together by the crosswise quilting 22 and 23.

The electric wire 26 connects the small plaque 24 fixed to the netting, created by the copper wires, to the floor socket 25. Said wire is provided with a diode 27.

To give an example, this cloth may be laid to great advantage on the springs of a bed with the felt downwards. The copper netting is clearly an efficient absorber of electrostatic energy, discharging it into the ground. The electromagnetic waves issuing from the ground would be reflected on the screen, created by the silvered coating to the PVC sheet, and reflected back to the ground.

CLAIMS

1. Cloth for protection against terrestrial electromagnetic fields characterized in that it comprises a copper network (15) and a silvered sheet (12), for the purpose of absorbing, and then discharging into the environment, electrostatic energy by means of the copper network (15) subsequently, by reflection, repelling to the earth the electromagnetic wages issuing therefrom, by means of the silvered layer (13) (14).

2. Cloth for protection against terrestrial electromagnetic fields, as in claim 1,
characterized in that on one of the two sides of the copper netting (15) there is a sheet (21) of cotton or of some other insulating material.

3. Cloth for protection against terrestrial electromagnetic fields, as in claim 1,
characterized in that on one of the two sides of the silvered sheet (12) there is a layer of non-woven felt (11) fabric of polypropylene or some other insulating material.

4. Cloth for protection against terrestrial electromagnetic fields, as in claim 1,
characterized in that the copper network (15) is comprised within an insulating fabric.

5. Cloth for protection against terrestrial electromagnetic fields, as in claim 4,
characterized in that the insulating fabric is formed of threads (16) (17) (19) of polyester.

6. Cloth for protection against terrestrial electromagnetic fields, as in claim 1,
characterized in that the copper network comprises wires of electrolytic copper (18) for the weft and bands (20)

of copper-cadmium wound spirally round a core (19) of polyester or other insulating material, for the warp.

7. Cloth for protection against terrestrial electromagnetic fields, as in claim 1,

characterized in that the copper network (15) and the silvered sheet (12) are comprised between two bodies (11)(21) of woven or non-woven fabric or other insulating material, the various components being firmly held together by crosswise quilting or stitching (22) (23).

8. Cloth for protection against terrestrial electromagnetic fields, as in claim 1,

characterized in that the diameter of the copper wires (18) (19) is comprised between 0.10 and 0.15 mm.

9. Cloth for protection against terrestrial electromagnetic fields, as in claim 1,

characterized in that the silvered coating (13) (14) of the sheet (12) is about 45 microns thick.

10. Cloth for protection against terrestrial electromagnetic fields, as in claim 3,

characterized in that the felt (21) is between 2 and 3 mm thick.

11. Cloth for protection against terrestrial electromagnetic fields, as in claim 1,

characterized in that the copper network (15) is connected to a socket (25) on the floor by means of a cable (26) for that purpose.

12. Cloth for protection against terrestrial electromagnetic fields, as in claim 11,

characterized in that the cable (26) comprises a diode (27).

13. Cloth for protection against terrestrial electromagnetic fields, as in claim 1,

characterized in that the copper network (15) is connected to an antenna for releasing electromagnetic charges into the environment.

14. Cloth for protection against electromagnetic fields as in claim 13,
characterized in that the antenna comprises one or more diodes.

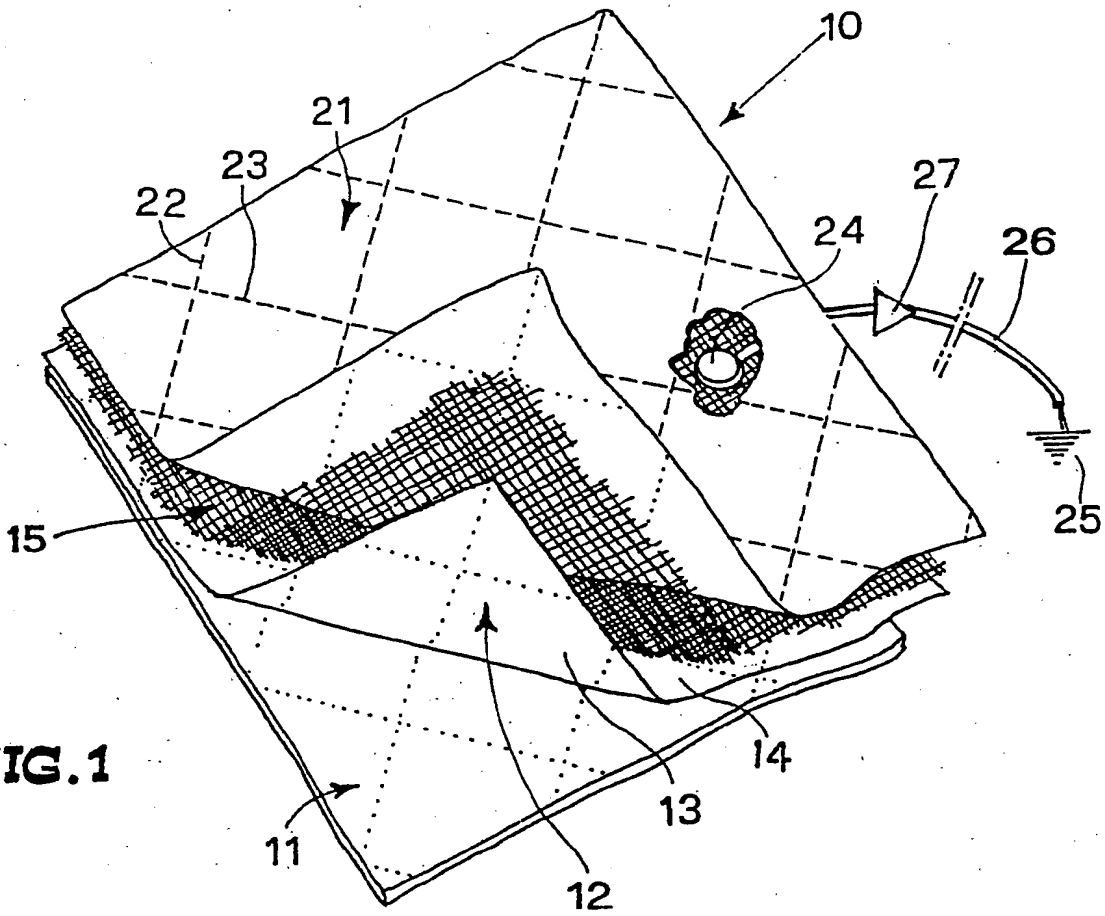

FIG.1

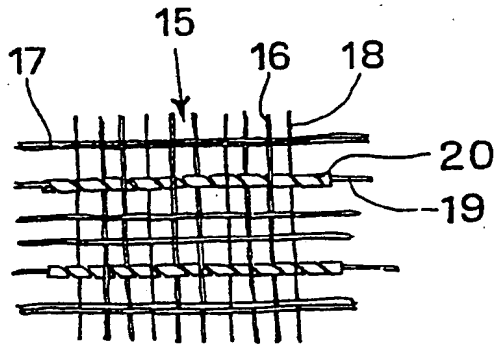

FIG. 2

INTERNATIONAL SEARCH REPORT

International Application No PCT/IT 91/00038

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all)[6]

According to International Patent Classification (IPC) or to both National Classification and IPC

Int.Cl. 5 A61N1/14 ; A61N1/16

II. FIELDS SEARCHED

Minimum Documentation Searched[7]

Classification System	Classification Symbols
Int.Cl. 5	A61N ; G21F ; A41D

Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched[8]

III. DOCUMENTS CONSIDERED TO BE RELEVANT[9]

Category °	Citation of Document, [11] with indication, where appropriate, of the relevant passages [12]	Relevant to Claim No.[13]
A	DE,A,3 417 895 (SCHULTE-UEBBING) November 14, 1985 see the whole document	1-7
A	GB,A,2 227 931 (COGHILL) August 15, 1990 see abstract see page 1, line 1 - line 15	1
A	DE,U,8 712 994 (SOCKE) December 23, 1987 see page 1; claim 1	1
A	DE,A,3 407 319 (PISTOR) August 29, 1985 see abstract	11
A	EP,A,0 099 872 (KUNNEN) February 1, 1984 see claims 1,2	13
A	DE,A,3 707 238 (KOLCKMANN) September 15, 1988 see abstract; claims 1-14	1

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IV. CERTIFICATION

Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report
30 SEPTEMBER 1991	- 9. 10. 91
International Searching Authority	**Signature of Authorized Officer**
EUROPEAN PATENT OFFICE	TACCOEN J-F.P.L.

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III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)

Category °	Citation of Document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.
A	EP,A,0 131 636 (ESPER) January 23, 1985 see page 2, line 16 - page 3, line 5 ---	1

ANNEX TO THE INTERNATIONAL SEARCH REPORT ON INTERNATIONAL PATENT APPLICATION NO.

IT 9100038
SA 47226

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The members are as contained in the European Patent Office EDP file on
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DE-A-3407319	29-08-85	None		
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		JP-A-	60035915	23-02-85

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